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high water
a floodplain management newsletter

Volume 32 June 1988

Floodplains and wetlands: a common interest in management

Geese rise up out of a wetland on the Beaverhead River. Photo by Tom Warren, Dept. of Fish, Wildlife and Parks.

About 7 percent of the nation's land is floodplain. Approximately 3 to 4 percent of the country is wetland and most of our wetlands lie within floodplains. Because of this overlap, coordination and cooperation between floodplain and wetland managers is essential for success. To date, this cooperation has been rare due to implementation of programs by separate agencies with differing philosophies, goals, programs, and funding sources.

On February 24 to 25, 1988, the Environmental Protection Agency convened a seminar to review progress towards solving the problems with coordinating floodplain, wetland, and other resource-based programs. The seminar also explored options for the federal government to help states, local governments, and private interest groups establish multi-objective greenways along rivers and streams.

Greenways are one example of coordinating floodplain and wetland management goals. The Commission on American Outdoors recommended creation of a national system of greenways along rivers and streams. These areas, planted with groundcover and trees, can increase outdoor recreation opportunities and provide environmental, social, and economic benefits. For example, greenways can reduce flood and stormwater damage by storing and conveying floodwaters. They reduce the placement of structures and other obstructions in the floodplain that impede floodwaters and raise flood heights. Water quality is improved by greenways that provide buffer areas from non-point pollutants. These spaces protect ecologically sensitive areas like wetlands and riprian zones. Greenways can also be an excellent source of wildlife habitat.

At the National Symposium on Wetlands Hydrology last September, Ron Flanagan of the Tulsa Flood Control District spoke about projects they have undertaken. Tulsa has suffered several 100-year floods during the last decade. Residents found that after each flood there is a two-year "window of opportunity" where public perception of flood damage is acute and they have been able to pass new ordinances, bond issues, and increase powers to cope with disasters. During this two-year time, Tulsa looked to multi-use purposes for wetlands acquisition to get many different groups interested in supporting the program.

To interest the public in open space for wetlands and floodplain acquisition, the flood control district emphasized

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recreational use. The city put a trail next to the creek as part of the acquisition program. Bicyclists, joggers, and outdoor enthusiasts joined the district as allies in the acquisition process. The support of these groups soon got community leaders behind the project. The city of Tulsa successfully solicited widespread support of their acquisition project by combining several uses into their wetland and floodplain programs.

Wetlands can serve as low-cost stormwater facilities. This practice was discussed at the wetlands hydrology symposium. States like New Jersey have used this practice extensively. Under certain conditions flooding can be eliminated by wetlands. Follow-up maintenance is essential when using wetland areas for stormwater management. For example, if the highway department deposits sand for wintertime roadway safety, this sand will eventually accumulate and could clog wetland water supplies.

Wetland management is not a well defined discipline in Montana. The State Department of Fish, Wildlife and Park's duck stamp program funds projects for wetland development and enhancement. Currently most projects have taken place in lake and pond areas; a few have taken place along streams. Funds can be used for acquisition of wetlands but emphasis has been placed on enhancement and development on public lands and existing wetland areas.

The Army Corps of Engineers is involved with the protection of wetland areas. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into wetlands or streams flowing over 5 cfs. Projects are evaluated according to the effects on wetland values, flood hazards, floodplain values, general environmental concerns, and other concerns. The Corps evaluates the public and private need for the project, alternative locations for the project, and detrimental effects on public and private use. The "404" permit system has combined the disciplines of both wetland and floodplain management.

Wetland in floodplain of Bitterroot River near Darby, Montana. Photo by Bob McInerney, Army Corps of Engineers.

As floodplain managers, it is important that we look beyond regulation toward broader goals and programs for achieving flood loss reduction. By protecting wetlands, we also reduce flood damage. In combining wetland and floodplain management activities we will gain a broader constituency for planning, funding, and implementing these activities. You, as a local floodplain administrator, provide support for wetland preservation activities in your area. Your support of wetland management funding and legislation will further floodplain management goals. For more information on wetland management, contact the Association of Wetland Managers, P.O. Box 2463, Berne, NY 12023, (518) 872-1804.

(Portions of this article taken from News and Views, Association of State Floodplain Managers, April, 1988, and The Flood Report. October, 1987.)

Proposed rule change

The Montana Department of Highways has petitioned the Board of Natural Resources and Conservation to amend Section 36.15.216 (3) (a) ARM pertaining to granting a permit for the establishment of a non-conforming use within a designated floodplain. The proposed rule is as follows:

"36.15.216 Permits-Criteria-Time Limits (3) The permit issuing authority may grant a permit for the establishment or alteration of an artificial obstruction or nonconforming use that is not in compliance with the minimum standards contained in these rules only if:

(a) The proposed use would not increase ~~flood heights or~~ flood hazard either upstream or downstream in the area of insurable building;"

Words crossed out will be deleted and words underlined added if the rule is adopted.

The Board has been petitioned to amend the rule because highway crossings of designated floodplains using culverts or bridges that would cause an increase in the 100-year flood elevation of more than 0.5 feet have resulted in the Highway Department seeking variances pursuant to ARM 36.15.216. However, under the present rule variance permits may not be granted when there will be any increase in flood elevation. The existing variance standards are more restrictive than the minimum standards they were meant to vary.

The proposed rule change has been advertised by the Montana Administrative Register published by the Secretary of State's Office. Comments have been requested and anybody can request a public hearing on the matter. It is anticipated that the Board will consider the proposed rule at its June 20 meeting in Helena.

Levee combines flood protection and mine reclamation

The residents of Belt in Cascade County have never gotten used to floods — the first of at least eighteen happened in 1892, and major flooding occurred in 1908, 1953, 1975, and 1981. The 1908 and 1981 floods were estimated to be 100-year events. But recently the town received funding for an abandoned Mine Reclamation Project administered by the Department of State Lands. An improved levee used mine tailings to provide flood protection by raising the height of the present dikes.

Belt Creek has its headwaters in the Little Belt Mountains and drains about 626 square miles by the time it enters Belt, flowing from south to north through the city. Much of the central business district and adjoining residential areas are lower than the banks and levee embankment. Considerable channel and dike work has been done over the years along the creek. Additions were made whenever material became available. According to the 1985 flood insurance study, the old dikes only offered protection from floods of less than 10-year frequency.

The abandoned mine reclamation project was intended to clean up waste from old coal mines that was piled next to Belt Creek on the upstream edge of town. Heavy metals and acids were leaching from the wastes and contaminating the stream. The material had to be disposed of in a location where it would not affect ground or surface waters. In addition, the city wanted to raise its dikes. Local residents wanted protection from the repetitive floods that affected the community. The threat of flooding had hindered the local economy. A plan was worked out to use some of the waste material to improve the levees. Using the material locally instead of trucking it to a disposal site outside of town reduced costs of transporting the waste.

To prevent acids from continuing to leach into Belt Creek, lime was mixed with the waste material to neutralize its acidity before it was added to the dikes. Clay was added to the embankment material to retard percolation of water through the levee. Much to the dismay of creek side dwellers many old shade trees had to be removed, but this was necessary because trees have a tendency to weaken levee embankments. The roots provide a pathway for water to travel that threatens embankment stability.

Costs to the city were about $20,000 for the levee improvements. Belt now has a levee that, according to the design engineer, protects the community from a 100-year flood, with additional freeboard. The number-one priority of local residents has been realized through the efforts of Mayor Russ Zanto and his administration. Many thanks are also due to the Department of State Lands for its willingness to cooperate with the city administration.

Belt Creek levee. Photo by Mike Heel, Dept. of State Lands.

1953 flood in Belt, Montana. Channel of Belt Creek shown on right. Photo courtesy of The Eagle.

One city's solution — a surcharge for floodplain construction

Des Plaines, Illinois has been hit twice this past year by devastating floods. As a result, city officials have taken several steps to mitigate the effects of future flooding. One innovative action is a surcharge for building permits issued for projects within the 100-year floodplain. The surcharge is $200 per residential unit and $.15 per square foot for any commercial or industrial structure (averaging about $250).

The funds are placed in the city's general fund and are set aside for structural and nonstructural mitigation projects. The City Council must approve of any expenditures.

Fire chiefs support floodplain management

The International Association of Fire Chiefs recently spoke out in support of reducing the exposure of both people and property to flood hazards. The Fire Chiefs wrote to the Association of State Floodplain Managers in response to their letter on the suspension of the new manufactured home standards. The new standards require that all replacement manufactured homes in the floodplain meet 100-year flood elevation standards.

The Fire Chiefs said "it it is our feeling that housing units (manufactured or otherwise) should be in areas that are safe from flooding. Therefore, it is only logical that in order to prevent the repeat of flood damage, a home should be replaced so that the home is elevated above the designated flood level."

This international association said they "do not normally become involved in specific issues such as this; the fire and rescue service clearly would favor reducing the exposure of both people and property to flooding. Flooding does pose hazardous conditions in buildings, including fire hazards and structural stability. In addition, severely flooded areas around homes place additional demand for rescue service and body recovery. Both of these situations expose emergency personnel to those same hazards."

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